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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,608	06/28/2001	Nawalage Florence Cooray	122.1457	4846

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EXAMINER	
TALBOT, BRIAN K	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,608	COORAY, NAWALAGE FLORENCE	
	Examiner	Art Unit	
	Brian K Talbot	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The amendment filed 2/11/04 has been considered and entered. Claims 1-8 have been canceled. Claims 16 and 17 have been added. Claims 9-17 remain in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama et al. (6,297,351) in combination with Smith et al. (6,124,372).

Murayama et al. (6,297,351) depicts a fluorinated o-aminophenol polymer. The compounds of components include the same materials used as polymer precursors in the present invention, i.e. dicarboxylic acids (col. 4, line 6 – col. 5, line 7). The polymer is heat treated to form a film (col. 7, lines 27-32) and the dielectric constant can be determined and are 3.0 or less. Murayama et al. (6,297,351) teaches that the polymer film can be used to form multilayered circuit boards (col. 12, line 66 - col. 13, line 6). The polybenzoxazole was dissolved in NMP to form a varnish and Heating was performed up to 350°C (col. 7, lines 15-30).

Smith et al. (6,124,372) teaches the inclusion of thermosetting end groups onto polymers and monomers to enable crosslinking (claims 1 and 20). Smith et al. (6,124,372) teaches improved water absorption and high thermal strength due to the crosslinking (col. 19, line 64 – col. 20, line 47),

Therefore, it would have been obvious for one skilled in the art to have put thermosetting end groups on Murayama et al. (6,297,351) monomers as evidenced by Smith et al. (6,124,372) with the advantages associated therewith, i.e. lower water absorption and high thermal strength.

Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sezi et al. (6,153,350) in combination with Smith et al. (6,124,372) further in combination with Murayama et al. (6,297,351).

Sezi et al. (6,153,350) teaches a polybenzoxazole made from fluorinated o-aminophenol and fluorinated aromatic dicarboxylic acid precursors. (col. 8, line 33 – col. 9, line 53). The precursors are polymerized by heat treatment to form dielectric sheets (col. 1, lines 20-23). A solution is made by dissolving PBO in NMP and applying to a substrate. The film is dried at 120oC and heated at 350oC (col. 12, Example 3).

Sezi et al. (6,153,350) fails to teach thermosetting end groups.

Features described above concerning Smith et al. (6,124,372) and Murayama et al. (6,297,351) are incorporated here.

Therefore, it would have been obvious for one skilled in the art to have put thermosetting end groups on Sezi et al. (6,153,350) monomers as evidenced by Smith et al. (6,124,372) with the advantages associated therewith, i.e. lower water absorption and high thermal strength.

Response to Amendment

4. Applicant's arguments filed 2/11/04 have been fully considered but they are not persuasive.

Applicant argued that the instant invention utilizes end-capping to improve mechanical properties whereby the art rejection is stated as a different reasoning, i.e. lower water absorption and high strength. Also, that there would be no reason to provide end-capping for improved mechanical strength since low fluorine does not mean low mechanical properties.

While the Examiner acknowledges this fact, the Examiner provides proper motivation for the combination and hence the rejection is proper even though a different reason has been relied upon. Applicant's arguments that the combination would not be justified since there is no reason a to provide "improved mechanical properties" is not persuasive as these benefits would result from the combination for the reasoning given by the Examiner.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B-K Talbot

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT